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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,520	12/30/2003	Irene Spitsberg	129968	7282
49305	7590	03/15/2005	EXAMINER	
JAGTIANI + GUTTAG 10363-A DEMOCRACY LANE FAIRFAX, VA 22030				MCNEIL, JENNIFER C
		ART UNIT		PAPER NUMBER
				1775

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/748,520	SPITSBERG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer C McNeil	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 03 January 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 and 8-28 is/are rejected.
- 7) Claim(s) 6 and 7 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 6 have been amended to limit the instance where the first metal oxide is yttria (5.5-6.5 mol%), and the second oxide is lanthana (0.8-1.5 mol%). Applicant points to paragraph 28 for support, however, paragraph 28 states that when the *total* amount of stabilizing component is from about 5.5-6.5 mol%, the yttria is about 4-5 mol% and lanthana is 0.8-1.5 mol%, and the mol% ratio of lanthana to total stabilizing component is 0.2-0.3. This is not consistent with applicant's amendments to claims 1 and 6. Please clarify. For the purpose of examination, the claims have been interpreted as currently written.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8-15, and 18-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Rickerby et al (US 6,025,078). Rickerby teaches a thermal barrier coating on a substrate comprising zirconia, 4-20 wt% yttria, and 5-25 wt% (2-25 mols%) erbia. The erbia may be replaced by dysprosia, europia, gadolinia, neodymia, and ytterbia. The amounts are considered to overlap with the ranges claimed. Regarding claim 9, a bond coat may be present. Regarding claim 11, the coating may be columnar. Regarding claims 10, 19, and 20, the coating may have a thickness of at least 100 microns. Regarding claim 23, the coating may be deposited via PVD.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mazdiyasni et al (US 3,525,597). Mazdiyasni teaches a zirconia composition including a mixture of yttria, dysprosia, and ytterbia in an amount of 6 mol%, added for the purpose of stabilizing the zirconia. While Mazdiyasni does not give specific values for each of yttria, dysprosia and ytterbia, the combination of these three oxides adds up to 6 mol%. One of ordinary skill in the art at the time of the invention would have found it obvious to provide each individual oxide in an amount sufficient to provide stabilization to the zirconia and not exceed six percent.

Claims 8-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruce (US 2003/0224200). Bruce teaches a thermal barrier coating comprising zirconia, 1-4 wt% yttria, and 0.1-4 wt% lanthana. Upon converting mol% to wt%, a composition that has 3 mol % yttria, 1 mol% lanthana,

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and 96 mol% zirconia, corresponds to approximately, 5.3 wt% yttria, 2.5 wt% lanthana, and 92.2 wt%. It is the position of the examiner that 5.3wt% (3 mol) yttria is substantially close to that of the composition range for yttria of Bruce (the lanthana and zirconia composition is completely within the claimed range), and compositions with such close proportions to those in the prior art are considered to be *prima facie* obvious, and to have similar properties (*Titanium Metals Corp.*, 227 USPQ 773 (CAFC 1985)).

Claims 1, 8, 9, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Litton et al (US 6,730,422). Litton teaches a thermal barrier coating comprising a first oxide of zirconia, a second oxide of lanthana or samaria, and a third oxide that may include yttria. The lanthana or samaria may be present at 5-60 mol%, and the yttria may be present at 5-60 mol%. It is the position of the examiner that 10 mol% is substantially close to that of the claimed composition ranges, and compositions with such close proportions to those in the prior art are considered to be *prima facie* obvious, and to have similar properties (*Titanium Metals Corp.*, 227 USPQ 773 (CAFC 1985)).

#### *Allowable Subject Matter*

Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Response to Arguments*

Applicant's arguments have overcome the 112 second paragraph rejection of the previous office action.

Applicant's amendments have overcome the rejections over Nakayama (1999).

Applicant's amendments have overcome the rejection over Alperine '118.

Applicant's amendments have overcome the rejection over Rigney '115.

Applicant's amendments have necessitated the new 112 first paragraph rejection as explained above.

Regarding Mazdiyasni, applicant argues that the combination of yttria, dysprosia, and ytterbia is not claimed. Applicant's attention is drawn to claim 5 of the patent, where the combination is distinctly claimed. Applicant's amendment to the specific ranges of the oxides has necessitated the new 103 rejection over Mazdiyasni.

Regarding Rickerby '078, applicant argues that the examples given are not exemplary of the ranges claimed. Rickerby gives ranges of 4-20 wt% yttria, 2-25 mol% erbia and the remainder zirconia. This is still considered to overlap with applicant's range of 3-6 mol% yttria, and 0.8-4 mol% erbia. The reference does not require to give examples of each and every point in the range taught.

Regarding Bruce '200, applicant's amendments necessitated the new 103 rejection with regard to the newly claimed specific ranges of yttria when combined with lanthana.

Regarding Litton, applicant argues that the claims as amended define a lower level of samaria (0.5-4 mol%) and lanthana (0.8-1.5) for claim 1 and 0.5-4 mol% for claims 8-9, and 21-23. Claims 1, 8-9, and 21-23 do not limit the range of samaria any more than "about 0.8-4 wt%" for claim 1, and "about 0.5-4 mol%" for claims 8-9 and 21-23. Lanthana is further limited, but samaria is not further limited. Litton teaches that either lanthana or samaria may be present at a range of 5-60 mol%. Therefore, Litton is still considered to read on the claims.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing

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date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C McNeil whose telephone number is 571-272-1540. The examiner can normally be reached on 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer McNeil  
Primary Examiner  
March 12, 2005